

Africa's Petroleum Industry

Presented to the symposium on
Africa: Vital to U.S. Security?

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Key Points

- West Africa is a strategic supplier to the US/Global Market
- Africa's role in the global market expected to increase in the medium term
- China and India represent competitors with additional bargaining tools--downstream investment and abundant capital
- Threats to stability of supply are more internal than external
- Increasing political stability in producer countries key to reducing supply risk

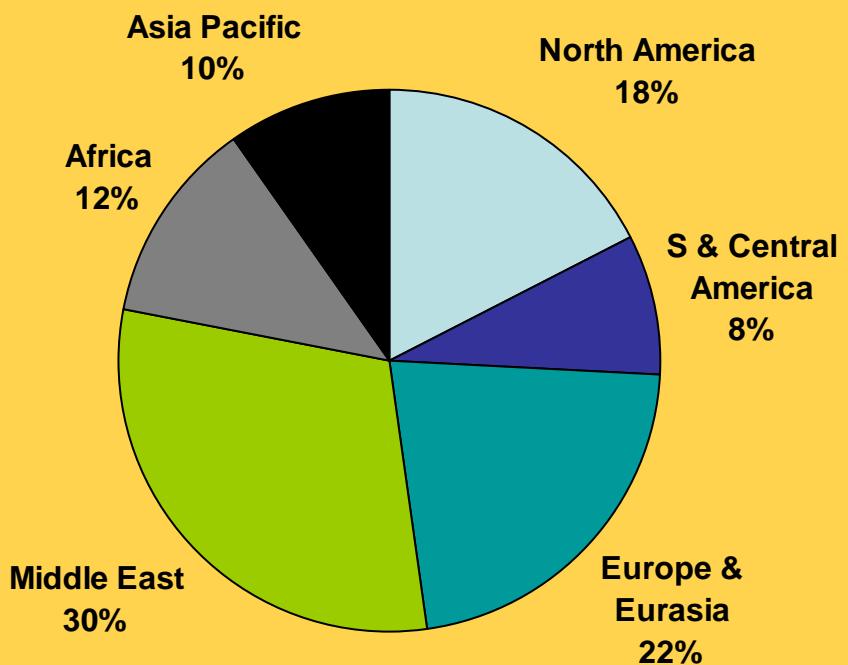
Who Counts in Global Oil?

| PRODUCERS (mbpd) | CONSUMERS (mbpd) | | EXPORTERS (mpbd) | | IMPORTERS (mbpd) | | |
|---------------------|---------------------|----------|---------------------|--------------|---------------------|----------|------|
| Saudi Arabia | 10.6 | US | 20.5 | Saudi Arabia | 8.7 | US | 11.8 |
| Russia | 9.3 | China | 6.7 | Russia | 6.7 | Japan | 5.3 |
| US | 7.2 | Japan | 5.3 | Norway | 2.9 | China | 2.9 |
| Iran | 4.1 | Germany | 2.6 | Iran | 2.6 | Germany | 2.5 |
| Mexico | 3.8 | Russia | 2.6 | Venezuela | 2.4 | S. Korea | 2.1 |
| China | 3.5 | India | 2.6 | UAE | 2.3 | France | 2.0 |
| Norway | 3.2 | S. Korea | 2.3 | Kuwait | 2.2 | Italy | 1.7 |
| Canada | 3.1 | Canada | 2.2 | Nigeria | 2.2 | Spain | 1.6 |
| Venezuela | 3.0 | France | 2.0 | Mexico | 1.7 | India | 1.5 |

Sources: BP (2004 data); U.S. Energy Information Administration (2004 data)

Global oil production by region

| Region | MBPD |
|---------------------|------|
| North America | 14.2 |
| S & Central America | 6.7 |
| Europe & Eurasia | 17.6 |
| Middle East | 24.6 |
| Africa | 9.7 |
| Asia Pacific | 7.9 |



Source: BP Statistical Review of World Energy, June 2005

Who Counts in Africa?

| PRODUCERS (mbpd) | | CONSUMERS (mbpd) | |
|--------------------------------|------------|---------------------|------------|
| Nigeria | 2.5 | Egypt | .57 |
| Algeria | 1.9 | South Africa | .51 |
| Libya | 1.6 | Nigeria | .31 |
| Angola | 1.0 | Algeria | .23 |
| Egypt | .71 | Libya | .22 |
| Eq. Guinea | .35 | Morocco | .16 |
| Sudan | .30 | Tunisia | .08 |
| Congo (Brazzaville) | .24 | Kenya | .05 |

Sources: International Energy Agency; U.S. Energy Information Administration (2004 Production and Consumption).

Top 15 US oil suppliers

| COUNTRY | THOUSAND BARRELS PER DAY |
|----------------|--------------------------|
| Canada | 1,616 |
| Mexico | 1,601 |
| Saudi Arabia | 1,498 |
| Venezuela | 1,289 |
| Nigeria | 1,067 |
| Iraq | 653 |
| Angola | 306 |
| Kuwait | 245 |
| United Kingdom | 231 |
| Ecuador | 226 |
| Algeria | 216 |
| Norway | 154 |
| Russia | 145 |
| Colombia | 140 |
| Gabon | 134 |

Source: Energy Information Administration 2005

Expected Market Value of West African Crude Oil Production

| | 2002-2010 | | | 2010-2019 | | | 2002-2019 | | |
|--------------|-----------------|------------------|------------|-----------------|------------------|------------|------------------|------------------|------------|
| | IOCs | Govt | Govt Take | IOCs | Govt | Govt Take | IOCs | Govt | Govt Take |
| Nigeria | \$28,026 | \$110,065 | 80% | \$26,180 | \$95,011 | 78% | \$54,206 | \$205,076 | 79% |
| Angola | \$28,651 | \$42,623 | 60% | \$34,852 | \$51,275 | 60% | \$63,504 | \$93,898 | 60% |
| Eq. Guinea | \$6,361 | \$9,689 | 60% | \$4,876 | \$5,647 | 54% | \$11,237 | \$15,336 | 58% |
| Gabon | \$2,989 | \$8,988 | 75% | \$1,701 | \$5,095 | 75% | \$4,690 | \$14,083 | 75% |
| Congo | \$3,727 | \$7,333 | 66% | \$3,288 | \$6,452 | 66% | \$7,015 | \$13,784 | 66% |
| Chad | \$5,465 | \$2,158 | 28% | \$2,953 | \$1,650 | 36% | \$8,418 | \$3,808 | 31% |
| Cameroon | \$784 | \$2,362 | 75% | \$442 | \$1,331 | 75% | \$1,226 | \$3,693 | 75% |
| TOTAL | \$76,004 | \$183,218 | 71% | \$74,292 | \$166,461 | 69% | \$150,296 | \$349,678 | 70% |

Source: "West Africa Petroleum Sector" PFC Energy, December 2003

Why is African Oil Strategic?

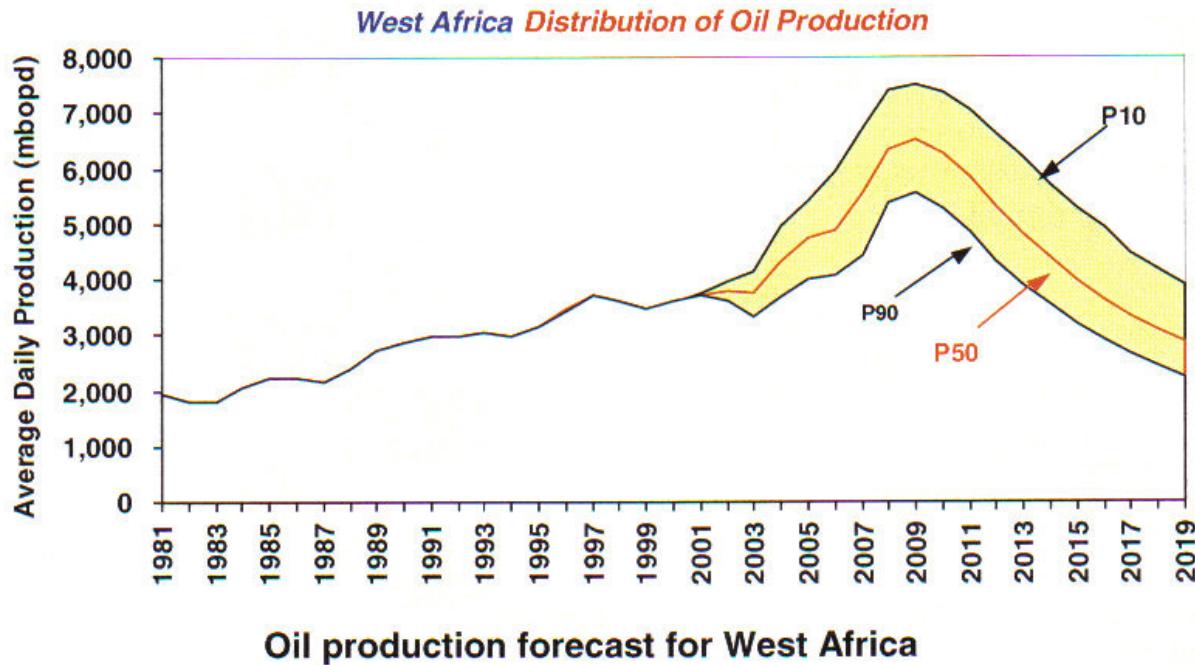
- Diversity of supply (12-14% of US supply; could reach 20%)
- Key marginal supplier in market with no excess capacity
- Access (\$30-40 billion in investment planned for coming decade, 100,000 U.S. jobs supported)
- Increasing production (Between 2004 and 2010, West and Central Africa will comprise 20% of new world oil production)

Sources: PFC Energy 2003, CERA, CSIS

Africa's Increasing Importance

- Expected Production Growth through 2010
- New production from historical producers: Nigeria, Angola
- New production from new producers: EG, Chad
- Decline from Cameroon, Gabon, Congo
- New frontier areas

Oil production in Africa Set to Grow as Much as 45-50% this decade



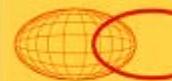
Source: "West Africa Petroleum Sector" PFC Energy, December 2003

Chinese and Indian influence in Africa

- Increasing demand in Asia fuels competition for oil supply
- Chinese firms willing to invest in African refining, unlike IOCs
 - China extended Angola a \$2b loan in exchange for preferential access E&P acreage
 - China and India won blocks in Nigeria due to investments in downstream

Vulnerabilities in infrastructure and threat of supply disruption

- External terrorism considered a low-probability threat
- Internal tensions cause shut-ins of production, although infrastructure is largely unaffected
 - 2003: shut-in of 800,000 bpd in Nigeria due to civil unrest in the Delta
 - Coup or change of government in EG
 - Internal unrest in Angola could pose a threat to personnel and facilities



Enhancing energy security

- U.S. energy security is susceptible to supply disruptions in Africa, BUT
- Africa itself does not have an energy security problem
- U.S. interest to promote political stability in Africa as part of a concentrated effort in the region to tackle corruption, poverty, oil revenue management

Policy Steps for the U.S.

- Increase Diplomatic attention
- Promoting stability
 - Governance: increased technical assistance for reformers
 - Democracy building: strengthen civil society groups in human rights and transparency

Policy Steps for the U.S.

- Enhancing security
 - Maritime environment: strengthen bilateral capacity for the protection of infrastructure
 - Crime prevention: pilot enforcement program to combat illicit oil sales, money laundering, arms trafficking
 - Regional initiatives: support nascent regional bodies such as the Gulf of Guinea Commission
 - Dialogue: create a high-level dialogue with China/India on Africa



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